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Division of
Water Resources

Illinois



FLOODPLAIN MANAGEMENT RECONNAISSANCE STUDY REPORT

CHRISMAN EDGAR COUNTY



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CITY OF CHRISMAN
EDGAR COUNTY, ILLINOIS
FLOODPLAIN MANAGEMENT
RECONNAISSANCE STUDY

Prepared By

U.S. Department of Agriculture
Soil Conservation Service
Champaign, Illinois

In cooperation with

STATE OF ILLINOIS
Department of Transportation
Division of Water Resources

December 1984

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CITY OF CHRISMAN

RECONNAISSANCE STUDY

INTRODUCTION

Use of floodprone areas can be a severe problem in Illinois. Urbanization and floodplain encroachment are increasing the severity of this problem. Over 800 communities in Illinois have been identified as having flooding problems.

The Illinois Division of Water Resources (DWR) is the responsible state agency for urban flood control and for setting priorities of flood studies within urban areas. The Soil Conservation Service is providing assistance to the Division of Water Resources in setting these priorities. A joint coordination agreement was executed between the Division of Water Resources, State of Illinois, and the USDA, Soil Conservation Service on April 30, 1976 and revised in December 1978 to furnish technical assistance in carrying out Flood Hazard Studies. These studies are carried out in accordance with Federal Level Recommendation 3 of "A Unified National Program for Flood Plain Management," and under Section 6 of Public Law 83-566. A plan of study was executed in October 1983 for reconnaissance studies for 15 Illinois communities. These reconnaissance studies will utilize existing floodplain information, historical high water profiles, and the 100 year floodplain from flood insurance studies when available. Average annual damages are estimated for the structures within the floodplain.

This study was conducted and the report provided for the purposes of:
1) To evaluate needs for additional future studies, 2) to estimate average annual damages, 3) to provide an updated estimate of the 100 year floodplain and map, and 4) to provide guidance and recommendations to the community for improved floodplain management.

STUDY AREA DESCRIPTION

The City of Chrisman is located in Edgar County, Illinois, about 13 miles north of Paris and 23 miles south of Danville on Illinois State Highway #1. The population of Chrisman is 1,413, according to the 1980 census.

The transportation facilities in the area include the New York Central, Baltimore and Ohio Railroads, and United States Highways #36 and #150, as well as Illinois State Highway #1. A blacktop road network connects the smaller villages and cities to other communities in the area.

A branch of Crabapple Creek flows along the north side of Chrisman. It joins the main channel approximately 1 mile east of the city. The drainage area of the Crabapple Creek branch by the city sewage disposal plant is 14.5 square miles. The drainage is in the Wabash River Basin, hydrologic unit #05120111, Crabapple Creek subwatershed #010.

The drainage area is mainly cropland, with corn and soybeans as the main crops. A few small pastures and some wheat are also grown in the area. For the most part, conventional tillage is still the primary way of farming. Some progress has been made toward conservation tillage, but it is a slow process to educate the landusers to new systems. The more rolling cropland is at the upper end of the drainage area, where it actually becomes very undulating and choppy.

Because of the steep slopes and length of slopes, runoff is very rapid in this part of the watershed.

The predominate soils in and around the immediate area of Chrisman include Drummer, Flanagan, and Elburn. These particular soil groups are somewhat poorly to poorly drained, which adds to the water problems of the city. The upland soils include Raub, Sidell, and Russell, which are well drained, for the most part. Since this group of soils has much more slope runoff will be much faster than the previous group of soils will be able to handle. The soils information is from the July 1970 General Soils Map of Edgar County.

The city does have a sewage treatment plant located on the east side of the community. It is located above the floodplain, but fairly close to the main ditch and a lateral watercourse coming through the cemetery.

NATURAL VALUES

Since cropland, with mainly a corn and soybean rotation is on 95 percent of the watershed, wildlife cover is at a minimum. If conventional tillage remains the main farming method, the cover situation will not improve. A few open ditches with tree lined banks are in the immediate area to give some cover. Old fence rows and minor areas of wheat, legumes, and pasture will provide most of the wildlife cover that will be available.

Conservation tillage or no tillage would provide more cover for small game. This in addition to the few ditches available would support more wildlife and plant varieties, making the area a better place to live, work, and play.

FLOOD PROBLEMS

Flooding along Crabapple Creek, except for the inconvenience of the ball diamond area, is not a major problem at this time. At present the most serious problem of flooding occurs from a small tributary that starts at the northwest edge of the city. It starts as an open channel drain and becomes a closed drain at Illinois Street which sometimes does flood a nearby television shop. Some degree of flooding will continue along the drainage path all the way to Washington Street, where water will overtop the street during intense rainfall. This tributary flooding is generally the result of local heavy rainfalls and could occur during any part of the year. Since most of the flooding is due to heavy local rainfalls over a relatively small watershed, flooding is generally of short duration.

Another small tributary flows on the east side of the community. In the past, this has never really caused any problems. However, in the past few months, the city has constructed a new building in conjunction with their sewage treatment plant that is very close to the above tributary. In fact, the water has to turn a right angle at this point where the new facility is located to reach the outlet. If left "as is", on intense rainfalls, surface runoff water will find its way into the new sewage treatment facility.

Another area of shallow flooding occurs north of the Baltimore and Ohio railroad tracks. This is presently a large, low area that holds

surface runoff from across the tracks. An office, 1 trailer, and approximately 6 garages or sheds have the potential for damages from this shallow flooding. Eventually, the storm sewers drain this area. In smaller rains where damages do not occur, this holding pond actually helps the cities storm sewer system.

Because of the open channel to closed channel drainage system, water flow restrictions are present due to the probable undersized culverts in the present system.

Since the soils in the city are of the type with high ground water tables, the few homes that still have not made use of the sanitary sewer system are subject to seepage problems. This causes ponded and standing water that is foul smelling to the homeowners, neighbors, and children, and could become a potential health hazard. It is the intention of the city to eventually require every home to be connected to the treatment plant.

According to local residents, one of the largest flooding periods occurred during the summer of 1982. This was an intense rainfall over a period of just of few hours.

The underpass at Route #1, tends to flood during intense or large rainfalls. Since children use this to get to and from school, care must be taken to avoid any possible danger to human life.

New home construction in Chrisman has been moderate in the past few years and will probably continue at about the same rate. No large growth potential is foreseen in the near future, and the population will increase slightly or remain about the same as present in the next few years.

PROBLEM SUMMARY

Estimated average annual damages to the city of Chrisman are listed below:

<u>Number</u>	<u>Total Value</u>	<u>Average Annual Damage</u>
8 Homes		\$2,070
2 Businesses		500
20 Garages or Sheds		1,030
Total	\$563,000	\$3,600

Additional Problem due to wetness -	
Yard damage (Approximately 40)	2,000
Basement flooding (Approximatley 35)	2,600
Street Repairs	<u>1,100</u>
	\$5,700

Total estimated average annual damages for Chrisman = \$9,300.
Flooding starts at the 10 year frequency storm.

EXISTING FLOODPLAIN MANAGEMENT

The city of Chrisman does not participate in the National Flood Insurance Program. Flood insurance is not available to business and homeowners. Although the city does require building permits, they probably will not contain any clause relating to the problem of flooding, since at this time, maps are not available for this purpose. The map in this report could be used to apply for the Emergency Flood Insurance.



RECOMMENDATIONS

It is recommended that the city should participate in the National Flood Insurance Program.

Because of existing high groundwater soils, the city should restrict the construction of crawl spaces, one-half, and full basements in the areas of the community subject to possible damages.

Plans should be set to insure that every home in the community is connected to the sewage treatment plant. For the present time, existing septic systems must be kept in good working order, to prevent possible health hazards to the residents of the community.

The city should improve the outlet of the surface runoff water that flows through the cemetery next to the sewage treatment plant. The end result,

besides channelling, could be constructing a "floodwall" to insure that surface runoff water is kept out of the treatment plant.

It is recommended that the city work with the drainage commissioners of Crabapple Creek to form a channel maintenance program. This plan, when implemented, would help keep the channel free from trees, brush

and debris. Periodic visual inspections by the drainage commissioners and the city, should be a routine part of the overall plan of Crabapple Creek.

The city has discussed the water coming from the blacktop road, west of town that crosses Washington Street. Between the New York Central Railroad and Illinois Street, this flow is in the form of an open ditch. At Illinois Street, it becomes an underground closed drain. This pipe may be too small to handle the water, at present. According to local officials, this water at one time probably entered Crabapple Creek north and west of the railroad tracks. At present it does not. This pattern to the northwest should be checked out. If possible to run the water this direction, it would eliminate most of the water related problems for the city of Chrisman.

It is recommended that the city engineer work with the Baltimore and Ohio Railroad to improve drainage in the area along Pennsylvania Street, north of the tracks. The existing storm sewer entrance at this location may have to be enlarged to handle this runoff.

The city should continue to improve and expand their existing storm sewer system. The maintenance and expansion of this system should be an "on going" program.

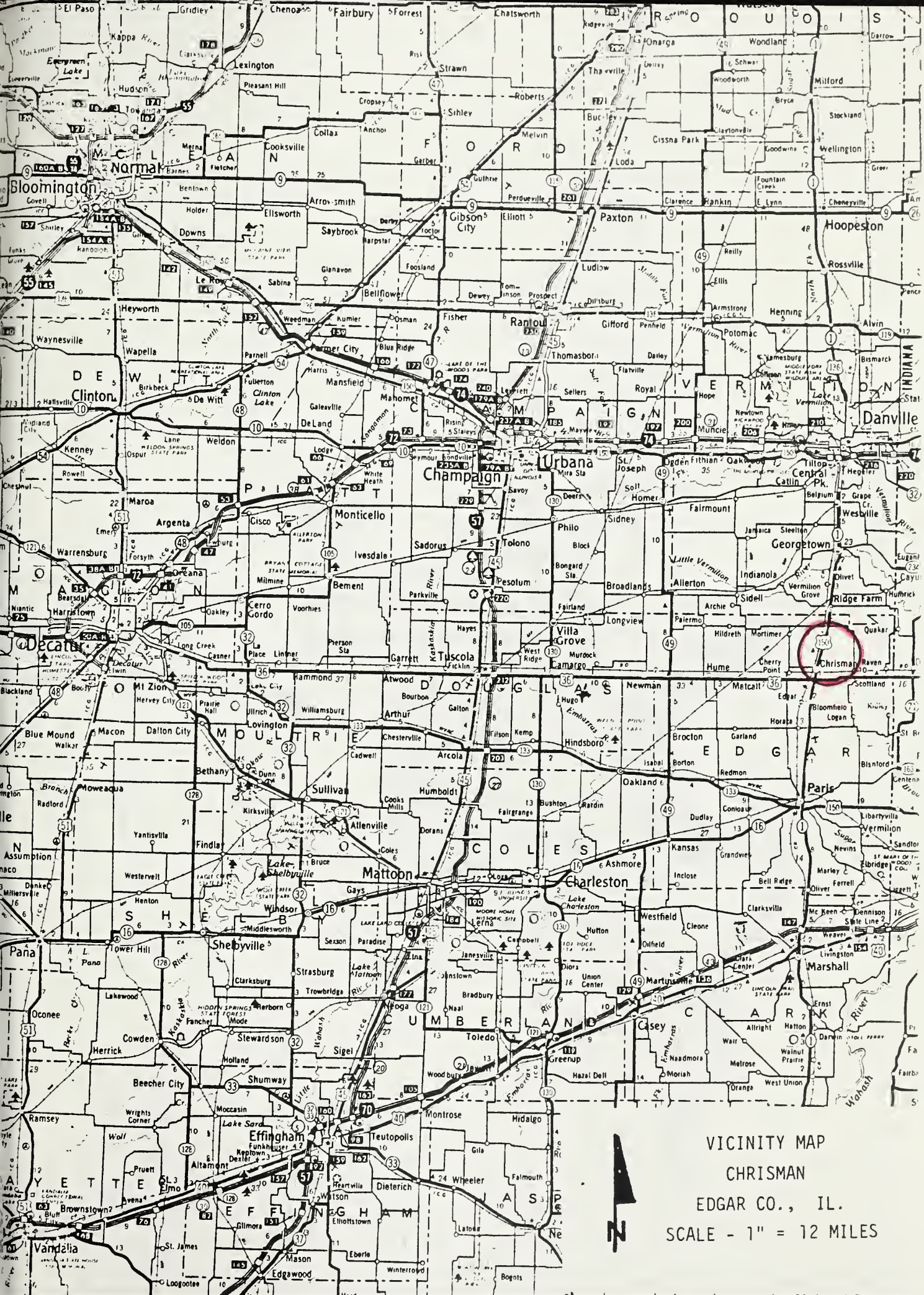
The state of Illinois should assign a low priority to any detailed flood studies for Chrisman.

INVESTIGATIONS AND ANALYSIS

No additional calculations, discharges, or profiles were made as a part of this report. The inventory of flooding and water problems is based on a field review and interviews with local officials and citizens. To obtain the 100-year floodplain, information from local officials, citizens, and field review information was used. Aerial photographs were provided by the Division of Water Resources.

Damages were based on property value estimates during field review, and the application of damage factors. These factors came from previous detailed floodplain management studies.





VICINITY MAP
CHRISMAN
EDGAR CO., IL.
SCALE - 1" = 12 MILES

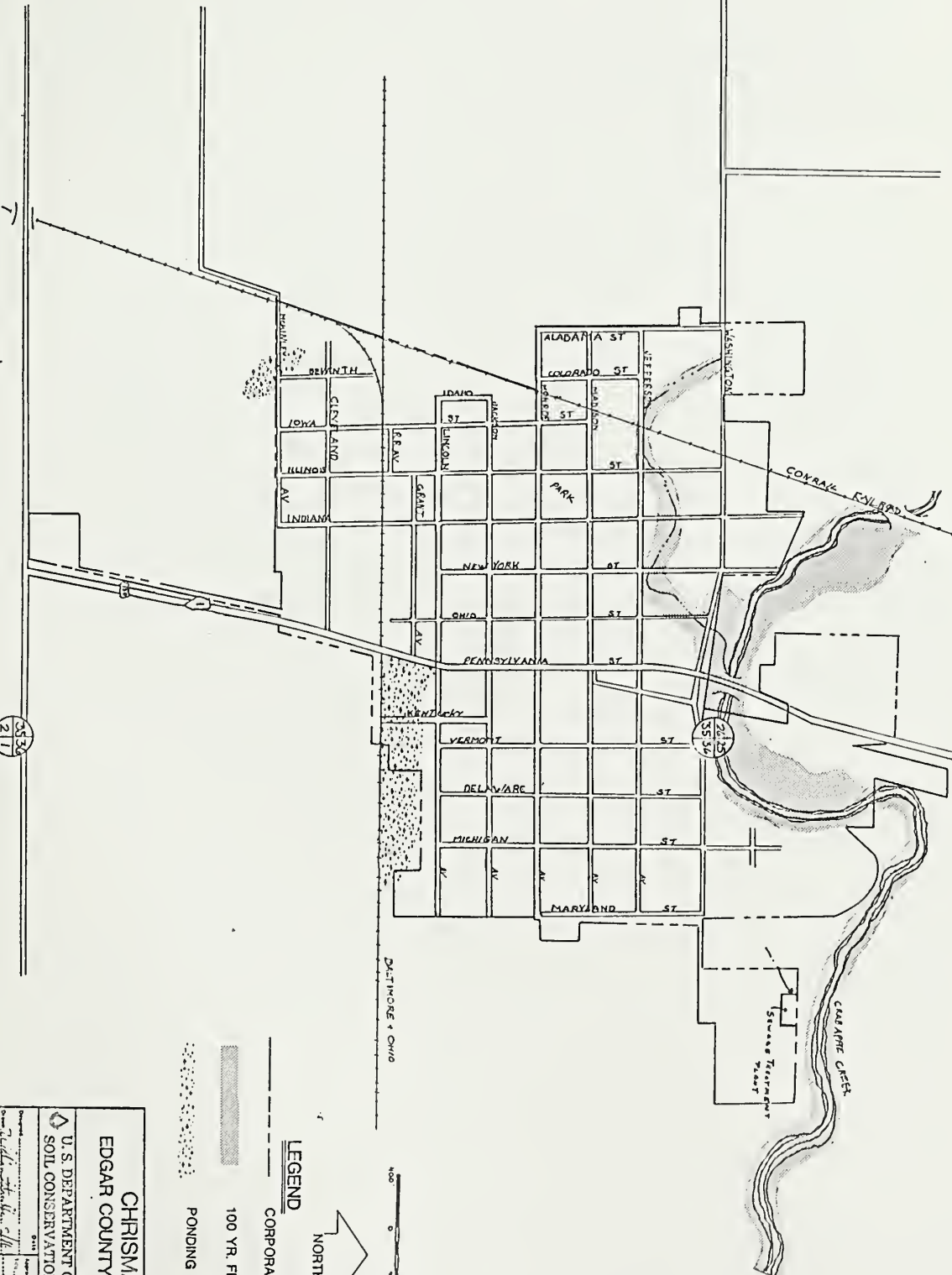


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2/1

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2/4



LEGEND



CORPORATE LIMITS

100 YR. FLOODPLAIN

PONDING

CHRISMAN
EDGAR COUNTY, ILLINOIS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Drawn by J. L. Thompson, S. H.	Checked by J. L. Thompson, S. H.
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